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**Revision of the species of *CARDIOPHORUS* Esch. of
America North of Mexico.**

FREDERICK BLANCHARD.

In the following attempt to define our species of *Cardiophorus* it has been the aim to indicate as correctly as possible whatever is observable in the material at hand. The series examined has not been so full in some respects as is desirable, and no doubt further specimens and more experience may modify some of the conclusions here adopted.

All our species have simple claws, but they may be separated into two quite distinct series according to certain differences seen in the prothorax. In the first division, including about one-third of our species, the hind angles of the pronotum are either short or obliquely truncate; beneath, the hind margin of the side pieces is either straight, or at most sinuate inside of the angles, and the submarginal suture is cariniform in its entire length when the hind angles of the pronotum are not truncate; but when the angles are truncate above the suture is slightly open at base and the margin of the flanks is a little more prominent than the margin of the pronotum, the margins becoming connate shortly before the base and the suture cariniform as before. The suture is straight or feebly sinuate. Accompa-

nying these peculiarities of form it will be observed that the margin of the front of the head is divided near the eyes. None of these species, except *cardisce*, are known from east of the Mississippi. In a cursory examination of Candèze, "Elaterides" v. iii, various allusions, in different descriptions, to the prothorax having the hind angles short or truncate, and the submarginal suture cariniform, indicate that the characters above mentioned are not peculiar to our species. The European species *C. musculus*, of which specimens are before me, is a case in point. Here the hind angles are short, but not truncate above, the submarginal suture is strongly cariniform, visible at base from above and confluent with the carina of the hind angle; the hind margin of the flanks is entire, and the frontal margin divided near the eyes. The European *exuratus*, which is also before me, to which our *cardisce* is compared by Candèze, belongs to the next division, the apparent resemblance not being of real importance.

In the second division the hind angles of the prothorax are produced behind and carinate with one exception. The submarginal sutures are usually present, impressed and broadly sinuate, rarely, somewhat cariniform anteriorly. In one species they are quite absent. The hind margin of the flanks next to the angles is strongly rectangularly indented making the base broadly lobed inside the emargination. The frontal margin of the head is entire. A few European species, both with simple and with toothed claws, have been examined and found to be of the present form.

Our species are all normally clothed with more or less abundant prostrate pubescence, arising from fine punctures, also with suberect bristles arising from sparser, coarser punctures. The punctuation in the same species is frequently quite variable in fineness and density, and the coarser punctuation of the pronotum is not distinguishable in some specimens, while in others it may be well marked. In other species the double punctuation while constant is variable in distinctness. The double punctuation is always more evident on the metasternum, hind coxal plates and abdomen, but it may be present or not on the prothorax, above and beneath. The antennæ vary sometimes very considerably, according to the sex, being longer, and usually with the joints 3-10 broader in the middle in the ♂ than in the ♀, in which sex they are gradually wider from base to tip. They also vary from being slender and feebly serrate to stouter and strongly serrate. The last joint of the maxillary palpi usually tri-

angular, becomes exceptionally oval. The prosternal lobe is usually prominent and strongly rounded, the posterior process extending behind the coxæ is subject to considerable variation which has been largely made use of in the following tables; when fully developed the process is nearly horizontal beneath, or feebly curved upward with marginal impressed lines between the coxæ, extending forward and curving round the coxal cavities and backward to, and meeting at, the apex. The lines frequently disappear immediately behind the coxæ and the process itself may be strongly ascending beneath and abbreviated in length. The submarginal sutures of the prothorax normally reach from the basal angle to the anterior third or fourth, but in some species they are quite variable, so that their length does not afford any distinguishing character. I have, however, laid some stress upon their development in one or two instances. The mesosternal fossa presents no particular feature worthy of remark, except the one used in the second table to separate *convexus* and its allies. This difference is very obvious in these species, separating them from all the others. The hind coxal plates vary greatly, and while of much importance in the first division, in the second very little use can be made of them, one important exception, however, occurs in the case of *dispar*, which seems almost worthy of being placed as another genus. Reference is made in the present paper to three other forms. In the first the plates are narrowed externally, the hind margin extending from the trochanter obliquely forward; in the second the hind margin is transverse; in the third the plates are dilated, that is, extending outward and obliquely backward from the trochanter. The variations in the tarsi are treated in the descriptions following. The claws, while showing some slight differences in size, are, on the whole, very much alike.

The sexes frequently differ in size, the variation between the smallest males and the largest females being sometimes very great, and in studying the species it is very desirable that due attention be given to the sexes of the specimens under consideration.

If any apology is needed for the length of the descriptions given I can only plead the insufficiency of many previous ones and the desire to leave as little as possible for granted.

I am greatly indebted to Dr. Horn for suggestions and encouragement as well as for the loan of specimens. To the Cambridge Museum, to Mr. Ulke and others, I would express my acknowledgements for favors received.

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20. **Edwardsii.**

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I

1. **C. amplipollis** Motsch.—Moderately convex, lead black, opaque, clothed above with fine cinereous pubescence and short suberect bristles, directed forward on the head and basal half of the thorax, backward on the anterior part of the thorax and on the elytra. Antennæ black, serrate, about as long as the head and thorax in the ♂, a very little shorter and more slender in the ♀, second joint more than one-half as long as the third, which and the following are about equal in length; third to sixth broader, seventh to eleventh gradually more slender, the last elongate oval, constricted at tip. Head densely and strongly punctulate, and with sparser coarser punctures, frontal margin elevated and broadly rounded, and with near each end a short oblique carina directed towards the upper part of the eye. Thorax usually broader than long, densely strongly punctulate, with sparser punctures regularly intermixed, longitudinally impressed at middle, sides strongly arcuate, more narrowed in front than behind, hind angles obliquely truncate above, produced beneath, the carina not joining the submarginal line behind, the basal lobe more or less distinctly tridentate, plicæ long. Elytra feebly rounded at sides or subparallel, striæ moderately impressed, punctured; intervals slightly convex, punctulate and transversely wrinkled. Body beneath clothed with cinereous pubescence, rather closely and strongly punctulate, with the coarser punctures everywhere evident, but a little less marked on the propleuræ. Intercostal process of prosternum long, rather narrow, acute and feebly ascending, the marginal lines reaching the apex. The submarginal lines of the prothorax are nearly straight, sharply elevated internally, or cariniform, impressed exteriorly and reaching beyond the middle, base inside the angle not, or scarcely sinuate. Hind coxal plates dilated behind outwardly with the free angle rounded. Legs black, middle and hind tarsi nearly as long as the tibiæ, slender, pubescent and spinose, the first joint of the middle and hind tarsi longer than the last, the second about equal to it, third and fourth gradually shorter; the anterior tarsi are shorter, the first joint about equal to the last, second, third and fourth gradually shorter; claws moderate. Length .26-.27 inch; 6.2-6.5 mm.

Calif.—Many specimens were obtained by Mr. Ricksecker on Willow. Collections of Horn, Ulke and LeConte. Only differs from immaculate *fenestratus* by the lead black color, the denser punctuation and opaque surface, and is possibly not distinct. In his description Motschulsky says “*interstitiis distincte punctatis, fere transversim rugatis; laminis coxarum quadrato dilatato*,” which seems to apply best here. He also says that it is smaller than *tenebrosus*, which would forbid a reference to the species described further on as *latiusculus* Esch. to which the name *amplicollis* is more appropriate.

2. **C. fenestratus** Lec.—Form of the last, shining, black, or with the elytra four spotted, pubescence fuscous. Antennæ black, as in the last. Head and thorax finely not densely punctulate, with coarser punctures, more or less evident intermixed. Thorax convex, usually broader than long, with sides strongly rounded and narrowed before, less narrowed behind, more or less distinctly impressed at middle, basal angles obliquely truncate above, produced beneath, the carina not joining the submarginal line, plicæ long, distinct. Elytra with sides rounded, striæ punctate, intervals moderately or feebly convex, finely punctulate and sometimes wrinkled, usually with an irregular or rounded yellow spot in front of middle and another before the apex of each elytron; in one specimen the anterior spot is prolonged obliquely forward to the humerus. Body beneath moderately punctulate, the coarser punctures less evident on the sides of the prothorax; submarginal line of prothorax cariniform at base, gradually impressed towards the tip, which usually reaches the middle or the anterior third; intercoxal process of prosternum margined behind; hind coxal plates distinctly dilated behind. Legs as in the last, black. Length .23-.27 inch.; 6-7 mm.

Maculate specimens have been seen from Nebraska, Kansas, Colorado, Utah, Montana, Washington Territory, Oregon, California and Nevada; and immaculate specimens from Nebraska, Utah and British Columbia.

Two specimens from Utah, unspotted, are somewhat intermediate in punctuation between the usual form and the preceding species. In both species the base of the side pieces of the prothorax is but feebly sinuate inside the exterior angle. The sexes do not differ much in size or form.

Messrs. Hubbard and Schwarz mention this species with an interrogation in their List of Coleoptera of Michigan (Proc. Am. Phil. Soc. xvii, p. 656), but the locality seems doubtful. I have also seen specimens labeled Pennsylvania, a scarcely possible locality.

3. **C. cardisee** Say.—Very convex, narrower and more acuminate behind with a more yellowish pubescence. Antennæ black or piceous, serrate, stouter in the ♂ and longer than the head and thorax, much shorter in the ♀. Head and thorax punctulate with coarser punctures intermixed. Thorax very convex, not impressed at middle, in the ♂ sometimes a little longer than wide, sides

rounded, less narrowed behind than in front, hind angles obliquely truncate above and with the carina not reaching the submarginal line, angles produced below. Elytra punctate striate intervals feebly convex, punctulate, sides rounded, apex narrower, normally with two small pale yellow spots before the middle and two before the apex, either pair may be obsolete or wanting, the posterior are sometimes transverse and reach both margin and suture, the humeri may have a small spot, or the ante-median spot may be extended forward obliquely to the humeri. In one ♀ (Massachusetts), a vitta extends from the humerus obliquely backward and inward narrowly one-third, then is dilated inwardly for another third and then directed both ways so as to reach both margin and suture, apex black. Body beneath shining, punctulate with coarser punctures intermixed, except on the sides of the prothorax; submarginal lines reaching the middle of the thorax or beyond, cariniform at base, impressed anteriorly, exterior angle of side pieces acute, produced beyond the base of the pronotum, not sinuate at base inside the angle, post coxal process rather short, margined behind, and feebly ascending; hind coxal plates with posterior margin transverse, not dilated behind. Legs of the same form as in the previous species, black varied with yellow. Length .22-.33 inch.; 6-8 mm.

Massachusetts, Cony Island, New York, New Jersey, Georgia, Florida, Canada, Michigan, Illinois, Missouri, Nebraska.

The only Massachusetts specimen seen was found on the sea-shore, and I suspect it does not occur inland east of the great lakes. In the two preceding species there is not a notable difference in size in the sexes, but here the ♀ is frequently much larger. It differs especially from *fenestratus* by the more elongate form, more acuminate behind, by the greater convexity of the thorax and the less dilated hind coxal plates. Candèze uses the truncation of the hind angles of the prothorax, in his synoptic table, to distinguish one of the variations of this species, but does not allude to it in the description. The type of *Dejeanii* Lec. is a ♂ of this species.

4. **C. bifasciatus** n. sp.—Black, opaque, clothed with yellowish pubescence, with two undulating yellow fasciæ across the elytra, ♀ robust, very convex, legs varied with rufous. Antennæ of the ♀ slender, feebly serrate, short, two-thirds the length of the head and thorax. Head feebly convex with frontal margin finely elevated and broadly rounded, the lateral oblique carina present, densely punctured with fine and coarse punctures. Thorax very convex, as wide as, or wider than long, densely finely punctate and with numerous regularly disposed larger punctures distant from one another three or four times their breadth, sides strongly rounded and narrowed in front, obliquely less narrowed behind, hind angles obliquely truncate above, produced beneath, basal plicæ moderately long, lobe bisinuate, disc very faintly longitudinally impressed, carina not confluent, with submarginal line, though sometimes barely reaching it by a minute deflection. Elytra wider than the thorax, convex, sides broadly rounded and narrowed from behind the middle to tip, strongly punctate striate, intervals very convex, becoming more so towards the apex, rather densely punctulate, a median or slightly ante-median fascia extending from the suture out-

ward and backward and then forward to the margin and sometimes extending forward on the sides to the humeri and narrowly backward to the posterior fascia which reverses the direction of the anterior one extending first forward and then backward. Body beneath more shining, strongly and closely punctulate, a little more sparingly on the prosternum, more coarsely and confluent towards the base of the flanks of the prothorax, deeply, coarsely and confluent punctured on the posterior half of the fourth ventral and on the last, submarginal line of prothorax cariniform extending to middle or anterior third, postcoxal process moderately long, somewhat ascending, not margined behind; the hind coxal plates are narrowed externally, very strongly in one specimen and broadly rounded, the external angle distinct in two others and rounded. Legs with femora dark, tibiae and tarsi more or less rufous, middle and hind tarsi with the first joint much longer than the last. Length .25-.28 inch; 6.1-7.1 mm.

California. Three females, Dr. Horn and Mr. Ulke.

Differs from the species described below as *stigmaticus* by the greater convexity, the stronger striae with convex intervals and the prosternal process less strongly ascending. In the three females observed this process is not distinctly visible, but it is probably not margined. This species seems to be somewhat analogous to the Eastern *cardisce*, but it differs by the prosternal process not (?) margined behind and by the narrower hind coxal plates.

5. **C. coxalis** n. sp.—Robust, purplish black, opaque, clothed with yellowish cinereous pubescence, elytra four spotted. Antennae black, moderately stout and serrate, and longer than the head and thorax in both sexes. Head and thorax densely finely punctate with intermixed sparser coarser punctures. Thorax equally wide as long in the ♂, wider than long in the ♀, convex, sides strongly rounded, more narrowed in front than behind, distinctly longitudinally impressed at middle, basal plicae well marked, moderate in length, median basal tooth more prominent, hind angles truncate above, produced beneath, the carina not joining the submarginal. Elytra with median and posterior subfasciate yellow spots, moderately convex, sides rounded and gradually narrowed from middle to apex, much as in *cardisce*, strongly striate, more so at sides and apex, punctures strong, intervals flat, rather densely punctured. Beneath shining, moderately densely punctulate and with sparser coarser punctures. hind angles of propleurae acute, scarcely sinuate within behind, submarginal suture cariniform, reaching the anterior third, postcoxal process short, strongly ascending, not margined behind, hind coxal plates distinctly dilated behind, hind margin of the fourth segment and the fifth segment coarsely, the latter densely punctured. Legs slender, black, of the usual form. Length .25-.27 inch; 6-7 mm.

Oregon, one pair ♂ and ♀ in Mr. Ulke's collection.

Resembles the next, but differs by the color and by the form of the posterior coxae. The elytra are more acuminate and the head is less coarsely and densely punctured. The ♀ is considerably stouter than the ♂.

6. **C. stigmaticus** Cand.—Robust, or the males frequently small and more slender, black or lead black, opaque with cinereous or yellowish, sometimes coarser pubescence; elytra four spotted or bifasciate with yellow. Antennæ black, not stout, serrate, longer than the head and thorax in the ♂, shorter and more slender in the ♀. Head densely punctate, with sparser, coarser punctures intermixed. Thorax densely less coarsely punctate, coarser punctures sparsely intermixed, sides rounded, somewhat obliquely narrowed behind, as wide as long ♂, wider than long ♀, basal plicæ moderate, hind angles obliquely truncate above, produced beneath, the carina not joining the submarginal behind, basal lobe rather broadly emarginate, bisinuate, the median tooth scarcely evident. Elytra a little wider than the thorax, with the sides rounded and rather more suddenly narrowed at apex than in the last, punctato-striate, intervals rather densely punctulate, flat, a median and posterior yellow spot or fascia. Body beneath, rather strongly punctulate, not closely on the prosternum, closely on the flanks, becoming coarser and confluent behind, the hind margin of the fourth and the fifth ventral coarsely and densely punctured, intercoxal process of the prosternum very short and strongly ascending, not margined behind, hind coxal plates narrowed externally, angles rounded. Legs black or piceous, varied with rufous. Length .20-.30 inch; 5-7 mm.

California.

The larger measurement is of a very robust ♀ coarsely and densely punctured beneath and with four small spots on the elytra.

7. **C. pullus** n. sp.—Small, narrow, very convex, black, rather shining, tibiæ and tarsi pale. Antennæ black, serrate, the second joint more than one half as long as the third, joints 3-6 wider, less than twice as long as wide, outer joints a little narrower. Head feebly convex, impressed before the vertex and behind the frontal margin, which is strong, slightly depressed and subangulate each side at middle, the lateral oblique carina evident, but not marked, rather coarsely and closely punctate. Thorax a little longer than wide, very convex, sides rounded and moderately narrowed in front and behind to the carina, then obliquely a little more narrowed to the tips of the hind angles, a median linear impression faintly evident from before the middle, deeper behind, base strongly impressed each side, lobe broadly emarginate, more elevated at middle, plicæ rather long and well marked, carina distinctly ending inside of and before the apex of the angle, strongly and rather sparsely punctulate on the disc and base with scattered coarser punctures, more densely in front and on the sides. Elytra slightly wider, sides subparallel, rounded and narrowed from behind the middle to tip, which is rather narrow and subacute, very strongly striate, the punctures moderate, rather closely placed, but not deeply impressed nor very evident, intervals very convex, strongly not densely punctulate, with irregularly placed, fine, transverse lines or wrinkles, giving the intervals a somewhat finely rugose appearance. Body beneath with flanks of prothorax rather strongly and subconfluently finely punctate, with sparser coarser punctures evident, prosternum feebly impressed at middle, more shining, sparsely and strongly punctulate, with a few scattered punctures, posterior process short, not margined behind, distinctly, not very strongly ascending, lateral submarginal lines cariniform, feebly curved, extending from apex of hind angles above to before the middle, base feebly sinuate inside the angle, metasternum and abdomen rather strongly punc-

tulate with coarser punctures intermixed, last segment more coarsely and densely punctured. Hind coxal plates slightly narrowed externally with the angles strongly rounded. Legs with trochanters, tibiae and tarsi, more or less pale, thighs black, tarsi slender, shorter than the tibiae, the first and last joints of middle and hind tarsi about equal. Length .18 inch; 4.7 mm.

One ♀, Garland, Col., June 22d. Cabinet of Dr. LeConte.

There are traces of a fine cinereous pubescence above and below. Palpi with last joint oval, obliquely truncate at tip. The small size and strongly striate elytra and other characters distinguish this.

8. **C. gemmifer** n. sp.—Very small, shining, black, with yellowish cinereous pubescence, elytra each with two spots. Antennae black, slender and feebly serrate, stouter in the ♂ and longer than the head and thorax. Head and thorax moderately punctulate and with sparser, coarser punctures. Thorax as wide as long, moderately convex, sides rounded, more narrowed in front, obliquely narrowed behind, more or less longitudinally impressed behind the middle, the impression sometimes more linear and deeper, hind angles produced, not divergent, the carina joining the submarginal behind, median basal lobe feebly tridentate. Elytra rounded at the sides, a little wider than the thorax, striae hardly impressed, punctured, less distinct at apex, intervals punctulate, a small yellow spot before the middle and a larger, usually paler one before the apex; in one specimen, a ♀ (California), the anterior spots are quite absent and the posterior ones are very small. Body beneath with the usual double punctuation, but it is not very strong, sides of prothorax without coarser punctures, the submarginal line carinate, reaching beyond the middle, hind angle a little sinuate inside, intercoxal process short, margined beneath and distinctly ascending, hind coxal plates dilated externally behind. Legs slender, rufous, thighs darker. Length .20 inch; 5–6 mm.

Nevada, California.

Very distinct by the characters given.

9. **C. tumidicollis** Lec.—Form short, rather robust, black, shining, or sometimes slightly obscure, clothed with fusco-cinereous pubescence. Legs sometimes partly rufous. Antennae black, second joint two-thirds as long as the third, which is equal to the fourth, stouter in the ♂, as long as the head and thorax, gradually more slender towards the tip. Head and thorax moderately or densely and strongly punctulate, with sparser, coarser punctures intermixed. The thorax is a little broader than long, convex, rather more so in the ♀, frequently finely longitudinally impressed at middle, sides rounded, narrowed in front and obliquely less narrowed behind, not or obsoletely sinuate, basal plicae rather long and well marked, hind angles prolonged and carinate, the submarginal line joining the carina at the apex of the angle; the basal lobe is strong and tridentate. Elytra moderately convex, two and one-half times the length of the thorax, sides rounded, narrower in front, striae moderate, with subquadrate or elongate punctures, intervals flat or feebly convex, and more or less punctulate, sometimes finely rugose. Body beneath shining and moderately punctulate, coarser punctures, very feebly evident on the prosternum, more distinct on the

metasternum and abdomen; prosternal process margined behind the coxæ, side pieces strongly sinuate at base inside of the angles, submarginal line visible from above at base, cariniform, feebly descending and more or less impressed, reaching to the middle or to the anterior third. Hind coxal plates with posterior margins transverse. Legs slender, black or varied with rufous; tarsi slender, the first joint of the middle and hind tarsi longer than the last, the second equal to the last. Length .23-.30 inch; 6-7.5 mm.

California, Nevada, Washington Territory.

In appearance resembles immaculate specimens of *fenestratus*, but the sides of the prothorax are not rounded behind, the hind angles are not truncate above and the hind coxal plates are less dilated. The sides of the prothorax beneath are sometimes more coarsely or variolate punctate behind.

10. **C. luridipes** Cand.—Opaque, dull black, with cinereous or fuscous pubescence and suberect bristles. Antennæ black, serrate, about as long as the head and thorax in the ♂, a little shorter and more slender in the ♀. Head densely, finely punctate and with sparser coarser punctures, front broadly rounded, with raised margin, the lateral oblique carina long and strong. Thorax broader than long in the ♀; sides strongly rounded and narrowed in front, obliquely much less narrowed behind, convex, disc feebly or not at all channeled, densely finely punctured with the coarser punctures distinct, or not; base impressed each side, lobe variable, distinctly tridentate or merely bisinuate, plicæ moderately long, well marked, carina joining the submarginal behind. Elytra a little wider than the thorax, feebly convex or subdepressed, sides broadly rounded or subparallel and narrowed from behind the middle, striæ not much impressed, with more or less elongate punctures, intervals flat, moderately punctulate and frequently finely transversely wrinkled. Body beneath more shining, submarginal line of prothorax cariniform, slightly visible at base from above, nearly straight and reaching to the middle or beyond, sides rather densely punctulate at front and middle with coarser punctures more or less evident, coarsely variolate punctate behind, prosternum rather less closely punctulate, with the coarser punctures regularly dispersed, posterior process long, arcuately, or usually feebly ascending, not margined behind, metasternum and abdomen with rather close, double punctuation, the last segment more coarsely and densely punctate at tip, hind coxæ transverse behind. Legs usually with the thighs dark and the tibiæ and tarsi pale, sometimes the tibiæ and tarsi are more or less infuscated or the color may be entirely yellow, tarsi slender, the first joint of the anterior ones equaling the last, in the middle and hind tarsi much longer than the last, which is scarcely longer than the second. Length .25 inch; 6-7 mm.

Ten specimens, California. Structurally, very similar to *tumidicollis*, but differs by the prosternal process not margined behind, by the coarser and denser punctuation, the usually paler legs, the erect bristles, which are usually only feebly evident in that species, and the form rather more elongate. Like that species, also, the hind margin of the prosternum beneath is distinctly sinuate inside the angles.

11. **C. abbreviatus** n. sp.—Form parallel, purple black, opaque, clothed with conspicuous white and fuscous hairs, the bristles scarcely evident. Antennæ black, serrate. Head and thorax finely and densely punctate, the former with the lateral oblique carina distinct, the latter with the sides rounded and narrowed in front, and obliquely moderately narrowed behind, basal plicæ moderate, hind angles slightly produced, the carina joining the submarginal at apex, but the angle is seen to be distinctly more produced beneath and strongly sinuate inside. The elytra are parallel, briefly rounded at tip, punctate striate, the intervals feebly convex, densely punctulate. In the one specimen before me the disc is clothed with fuscous pubescence, from base nearly to apex with a few white hairs intermixed, while the sides have white hairs with occasional fuscous ones; beneath rather finely punctulate, the coarser punctures more evident on the abdomen. The prosternal lobe appears shorter and less rounded in front than usual, the posterior process very short and strongly ascending, not margined, submarginal lines cariniform, nearly straight, hind coxal plates narrowed externally. Legs slender, thighs piceous, tibiæ and tarsi rufous, tarsi a little stouter and more spinous, the first joint of middle and hind pair but little longer than the last. Length .22 inch; 5.5 mm.

One male, California. Coll. Austin.

I think I saw in Mr. Fuller's collection a more robust female with the fuscous and white hairs more mixed. In the single specimen before me the frontal margin is impressed at middle. The prosternum is shining, very finely, not closely punctulate, the secondary punctures but little larger, the sides of the prosternum beneath are finely and rather closely punctulate over their whole area. The intervals of the elytra are transversely wrinkled. The pubescence is quite long and dense, appressed, and when not rubbed almost completely hides the surface beneath; on the under surface the pubescence is finer and cinereous.

II.

12. **C. erythropus** Er.—Elongate ovate, convex, piceous, acuminate behind, clothed with fine cinereous pubescence, basal two joints of antennæ and legs yellow. The antennæ are slender, feebly serrate, the second joint two-thirds as long as the third. The head is closely punctulate, feebly convex, the frontal margin strongly elevated and broadly rounded. Thorax subopaque, convex, sides strongly rounded and narrowed in front, less narrowed and sinuate behind, the angles carinate and slightly diverging, a short linear impression at middle behind, a transverse one on each side of basal lobe; lobe tridentate, basal plicæ rather short, the external rudimentary ones evident, the disc, base and sides posteriorly, extremely finely and densely punctulate and clothed with extremely fine and short pubescence, anteriorly the punctuation is stronger and less dense and the pubescence is much longer and less fine; there are no coarser punctures evident. Elytra a little wider than the thorax, gradually rounded and narrowed from in front of the middle to the tip, striæ moder-

ately impressed, the punctures not very closely placed, intervals a little convex and punctulate. Body beneath shining, clothed with moderate, yellowish cinereous pubescence; prothorax with the submarginal lines distinct, impressed, rather strongly descending, curved and reaching the middle, intercoxal process long, marginal lines extending to tip, in front feebly joining the antecoxal lines, which are not well marked, sides more closely punctulate than the prosternum, no coarser punctures evident; sides of mesosternal fossa prominent, nearly vertical; metasternum, hind coxæ and abdomen moderately punctulate, and with scattered coarser punctures, last segment of abdomen at sides and tip more coarsely and densely punctured; hind coxal plates transverse behind, angles rounded. Legs slender, the middle and hind tarsi as long as the tibiæ, the joints gradually shorter, the last joint hardly equal to the second, which is much shorter than the first, anterior tarsi shorter, the first joint hardly longer than the last. Length .34 inch; 8.8 mm.

South Carolina, LeConte collection. One specimen in perfect preservation, which appears to be a ♂. Precisely similar to some forms of *convexus*, but will be at once known by the dull lustre of the prothorax caused by the very dense and fine punctuation. There are also two South Carolina specimens in the Cambridge Museum from the Dr. Samuel Lewis collection. In one of them the elytra are paler.

13. **C. angustatus** n. sp.—Slender and elongate, shining black, clothed above with a fine inconspicuous fuscous pubescence and short bristles curved forward on the head and posterior part of the prothorax, and backward on the anterior part and on the elytra, basal two joints of antennæ and legs yellow. Antennæ slender, slightly serrate, longer than the head and thorax, bases of joints frequently more or less reddish. Head with frontal margin elevated, broadly rounded, feebly convex, evenly and moderately punctulate: the thorax is distinctly longer than wide in both sexes, feebly impressed behind the middle, finely not closely punctulate on the disc, a little more strongly and closely at the sides in front, no coarser punctures evident, sides broadly rounded, narrower in front and slightly narrowed behind and sinuate, the angles feebly divergent, strongly carinate, the basal plicæ are rather short, basal lobe tridentate. Elytra a little wider than the thorax, widest behind the humeri, sides gradually rounded and narrowed to the tip, strongly punctate striate, striæ deeper at sides and apex, intervals convex and punctulate. Body beneath clothed with fine cinereous pubescence, closely punctulate, with coarser punctures along the middle of the abdomen, last ventral more coarsely and densely punctate; prothorax with the submarginal lines impressed, curved and reaching beyond the middle, prosternal process long, marginal lines extending to the tip and in front of and not distinctly joining the more or less obsolete antecoxal lines; sides of mesosternal fossa prominent, receding but little from the perpendicular. Legs slender, the middle and hind tarsi about equal to the tibiæ, the first joint longer, the second equal to the last, finely spinous and pubescent beneath, the front tarsi are shorter and stouter and more spinous beneath, the first joint equal to the last. Length .30 inch; 7.7 mm.

Florida, Haulover, March 10. Three specimens, Austin collection; also collections LeConte and A. S. Fuller.

The male has the antennal joints more abruptly dilated to middle, then gradually wider to tips; in the female the joints 3-10 are gradually wider from base to tip, equal in length, the last joint elongate oval, feebly constricted at apical third. More slender than the allied species. The distinctly black color above and beneath and the deeper striæ distinguish it from *convexus* as well as the absence of double punctuation on the prothorax above and beneath. *Floridæ* is stouter, paler and with the intercoxal lines of prosternum joining well marked antecoxal lines. Intromittant organ of male with the side pieces finely barbed externally at tip.

14. **C. convexus** Say.--Elongate ovate, or variable in form, usually stouter than the last, brown black, fuscous or paler, shining, clothed with more or less dense fusco cinereous pubescence, basal two joints of antennæ and the legs yellow. Antennæ as in the last. Head and thorax rather closely punctulate, the latter more densely at sides and front, the coarser punctures varying from not all to very distinctly evident; the thorax is longer than wide, feebly impressed behind, the sides in both sexes always more narrowed in front, sometimes strongly rounded, sinuate behind with the angles moderately diverging, sometimes more broadly rounded and widest at base, basal plicæ variable in length. Elytra wider than the thorax, finely to strongly striate, striæ punctate, intervals more or less convex, punctulate; sides rounded and narrowed from behind the humeri to apex. Body beneath punctulate, much as in the last mentioned species; prothorax with the submarginal lines varying from a broken, short and faint line to a well impressed one broadly sinuate and reaching beyond the middle, intercoxal process margined behind, the lines variable in front, usually in Northern and Eastern specimens, extending in front of and not joining the antecoxal lines, but in Southern and Western ones confluent with them. Legs as in the last, thighs sometimes slightly fuscous at middle. Length .30-.37 inch; 7.5-10 mm.

Can., Mass, N. Y., Pa., Va., Ill., Mich., Mo., Kans., I. T., Texas, Ga., Fla., D. C.

The antennæ in the male, as in the last, are a little stouter. A species of wide range and showing considerable variation. The elytra are sometimes paler, as are also the antennæ. The hind angles of the thorax and humeri of the elytra are sometimes yellow. In some specimens from Virginia and Florida the base of the elytra is narrowly rufous. The hind coxal plates are sometimes with the posterior margin transverse, the free angle rounded, or narrowed externally and with the angle moderately or broadly rounded; in one specimen they are seen to be distinctly dilated behind. *C. insulsus* Cand. perhaps belongs here, but, having the thorax equally wide as long, it is quite as likely the next species.

15. **C. floridæ** Candl.—Elongate, rather obtuse before and narrowed behind, rufotestaceous or fuscous above and below, clothed with brownish cinereous pubescence and short and fine bristles, the surface beneath shining. Antennæ slender, feebly serrate, joints narrow, elongate, as in the preceding three species, length about equal to the head and thorax, basal two joints yellow, outer ones darker. Head, with a few coarser punctures and thorax thickly punctulate, punctures not evident on the latter; the thorax is convex, scarcely or not longer than wide, more strongly narrowed in front, the sides strongly rounded, narrowed and feebly sinuate behind, the angles hardly or not diverging, faintly channeled posteriorly at middle, the basal plicæ short. Elytra widest behind the humeri thence rounded and narrowed to tip, strongly striate, with rather closely placed subquadrate punctures, intervals convex, punctulate. Body beneath punctulate, sparser, coarser punctures evident on the metasternum, hind coxæ and middle of abdomen; prothorax with the submarginal lines distinct, impressed, reaching nearly to the anterior third, prosternal process long, horizontal as in the previous species, marginal lines extending to tip and confluent anteriorly with the well marked antecoxal lines; mesosternum as in the previous species, hind coxæ with posterior margin transverse, the angle strongly rounded. Legs slender, yellow as in the preceding. Length .33-.35 inch; 8-9 mm.

Florida. Several specimens.

Although the thorax is actually no wider than the elytra the entire insect often has an appearance of being narrowed from the anterior part of the thorax to the tip of the elytra. Very similar to *convexus*, but the shorter thorax and rather more strongly striate elytra as well as the usually paler color seem to distinguish it. The sparser, coarser punctures very evident on the prothorax in some specimens of *convexus* do not here appear. The head and thorax are usually a little darker than the elytra and beneath the pro- and metathorax are darker than the abdomen. If it were not for the existence of a typical specimen in the LeConte cabinet sent by Candèze I should be inclined to refer this species to *insulsus* Candl. and to consider the name *floridæ* as a synonym of *convexus* Say.

16. **C. longior** Lec.—Elongate, shining, black, clothed with fine, inconspicuous, fuscous pubescence and short curved bristles; thorax longer than wide; legs varying from black to yellow. Antennæ slender, as long as the head and thorax, but feebly serrate, joints narrow. Head with the front strongly margined and distinctly produced at middle, impressed behind the margin, faintly bi impressed on the vertex, rather closely punctulate, coarser punctures not evident. Thorax moderately convex in the ♂ or more strongly in the ♀, longer than wide, narrowed before and obliquely a little less behind, and broadly, feebly rounded on the sides in the ♂, or strongly rounded and widest in front of the middle in the ♀, finely, closely punctulate with the coarser punctures scarcely evident to more strongly with the punctures distinct, hind angles not divergent, carinate, basal fissures long, a median posterior linear impression, base tridentate at middle, median tooth broader and less prominent. Elytra with sides rounded and nar-

rowed from behind the middle to the apex, striæ well impressed, moderately closely punctate, intervals convex, rather sparsely punctulate. Body beneath rather closely punctulate, the coarser punctures evident on the metasternum, hind coxal plates and abdomen; prothorax with submarginal lines impressed, extending to middle or anterior third; intercoxal process long, feebly flexed, margined behind, very nearly or quite to apex; the mesosternal fossa has the sides less prominent and more oblique than in the preceding species; the hind coxal plates are nearly transverse posteriorly, the outer angles broadly rounded; legs piceous, varied with rufous, or entirely yellow, slender, the tarsi shorter than the tibiæ, the first joint of the hind tarsi a little longer than the last, that of the middle tarsi about equal in length, and that of the anterior tarsi a little shorter than the last. Length .30-.34 inch; 7.5-8.4 mm.

Bitter Root Valley, Montana, Garland, Col. Collections LeConte and Horn.

The Colorado specimens are a little more convex and more strongly punctulate.

17. **C. nevadensis** n. sp.—Robust, black, lustre dull, almost subopaque clothed with fuscous pubescence and short, suberect bristles, tarsi rufous. Antennæ black, serrate, as long as the head and thorax in the ♀. Head densely, finely punctate, rather broadly impressed behind the front. Thorax densely, finely punctate, convex, broader than long in the ♀, sides strongly narrowed and arcuate in front, moderately narrowed behind, very feebly sinuate, the angles not diverging, scarcely or not impressed behind, the basal fissures moderately long, the basal teeth rounded, the median one obsolete. Elytra a little wider than the thorax, convex, sides subparallel, narrowing at posterior third, striæ moderately deep and narrow, with rather closely placed elongate punctures, intervals moderately convex and rather closely punctulate. Body beneath rather closely punctulate, with sparser coarser punctures intermixed; prothorax with submarginal lines well impressed, short, or reaching the middle, the intercoxal process is moderately long, slightly convex beneath and distinctly ascending, the marginal lines reaching towards the tip; the hind coxal plates are well developed, the posterior margins being transverse, and the exterior angles prominent and rounded. Legs black, tarsi and sometimes the tibiæ in part, rufous, last joint of tarsi longer than the first. Length .35-.37 inch; 9-9.5 mm.

Nevada. Three females, Dr. Horn.

Resembles large specimens of *tenebrosus*, but apart from the intercoxal striæ it is distinguished by the denser punctuation of the thorax and the broader hind coxal plates. The sides of the thorax are but little narrowed behind, the legs are a little stouter than in the same sized specimens of *tenebrosus*, the tarsi shorter and stouter with the first joint more densely spinous beneath. The coarser punctures of the pronotum are evident, but only a little larger than the others.

18. **C. gagates** Er.—Size small or moderate, convex, black and shining, the ♀ frequently stouter, clothed with more or less developed, fine, cinereous pubescence and short suberect bristles. Legs sometimes in part pale. Antennæ rather

stout and strongly serrate, in the ♂ the joints 3-6 one-half longer than wide; punctuation of the head and thorax variable, but usually distinct, with the larger punctures quite evident, sometimes the thorax is only faintly punctulate and very smooth and shining. The thorax is very convex, with the sides strongly rounded and feebly to strongly sinuate behind, rather longer than broad, basal striae moderate, base tridentate at middle, a feeble impression in front of the base. Elytra somewhat variable in form, sometimes subparallel or again narrowed and rounded from the humeri, punctate striate, intervals convex and punctulate. Body beneath closely punctulate, sometimes strongly, with punctures feebly evident on the prosternum, more distinct behind; prothorax with the submarginal lines impressed, usually reaching the middle or beyond, prosternal process margined somewhat elevated behind; hind coxal plates somewhat transverse behind, the free angles not broadly rounded. Legs black or varied with rufous, tarsi shorter than the tibiae, the first and last joints about equal in length. Length .20-30 inch; 5-8 mm.

Nova Scotia, Massachusetts, New Jersey, Pennsylvania, Illinois, Michigan, Virginia, Georgia, South Carolina and Florida.

The largest females are sometimes confounded in collections with *convexus*, which is a more elongate insect with the thorax longitudinally distinctly more convex, and the prosternal process not margined behind. It is said by Candèze (iii, p. 165) that several examples of the variety with the feet rufous bear the name *laevicollis* in the Dejean collection, and that as Erichson based his description on specimens sent by Dejean it is probable that his *laevicollis* is identical with the present species.

19. **C. togatus** Horn.—Size small, not robust, convex, shining, black, with elytra wholly or partly red, clothed with short and fine pubescence and bristles. Antennae slender, serrate, longer than the head and thorax in the ♂, shorter in the ♀, the joints more than twice as long as wide. Head and thorax strongly, closely punctulate with coarser punctures intermixed; thorax narrowed in front, sides strongly rounded, narrowed and feebly sinuate behind, hind angles scarcely divergent, median tooth at base obsolete, the lateral ones not very prominent, basal fissures very short. Elytra elongate, subparallel, a little wider than the thorax, at posterior half narrowed and rounded to tip, punctate striate, intervals convex, moderately punctulate, entirely red, or with apical one third or one-half black or piceous. Body beneath rather closely punctulate, coarser punctures not evident on the prosternum, except on the lobe, nor on the sides of the prothorax, distinct behind, submarginal lines of prothorax reaching to anterior third, prosternal process feebly elevated, margined behind the coxae; hind coxae strongly narrowed externally, the angles broadly rounded. Legs slender, black, varied with rufous; tarsi slender, pale, the middle and hind ones with the first joint equal to or slightly longer than the last. Length .27 inch; 6.5 mm.

Texas. LeConte collection, Horn, Ulke.

The single specimen with red elytra is a female, the others are of both sexes apparently. Somewhat resembles the last in size and form, but besides the color, the much more slender antennae and narrower hind coxae easily distinguish it.

20. **C. Edwardsii** Horn.—Elongate, black, shining; elytra red, with suture and apex more or less fuscous, pubescence fine, moderately dense. Antennæ slender, black, or with basal two joints and the bases of the other joints more or less pale, a little longer than the head and thorax and stouter in the ♂, shorter in the ♀, the joints twice as long as wide, second joint two-thirds as long as the third. Head and thorax rather strongly punctulate, coarser punctures evident. Thorax longer than wide, moderately convex, feebly channeled at middle, broader in the ♀, with the sides more strongly rounded, strongly narrowed in front, moderately behind and feebly sinuate, hind angles sometimes divergent, usually not, basal plicæ long, basal lobe feebly, obtusely tridentate. Elytra considerably wider than the thorax in the ♂, a little wider in the ♀, sides rounded and narrowed behind the middle to the tip. Body beneath punctulate, the coarser punctures evident on the metasternum and abdomen, but not on the prosternum, or sides of prothorax, submarginal lines of prothorax long, prosternal process stout, a little flexed upward, convex and not margined behind, hind coxal plates but little narrowed externally, the angle rather broadly rounded. Legs slender, black, or partly rufous; tarsi slender, about as long as the tibiæ, first joint of middle and hind pair longer than the last, the second about equal to it. Length .34-.37 inch; 8.5-9 mm.

California, Nevada. Collections LeConte and Horn.

Much larger than and quite different from the preceding, which is similarly colored. The tarsi are very similar to those of *convexus* and allies, and the antennæ in the ♂ are almost equally slender. So far as observed the thorax is always distinctly much narrower in the ♂.

21. **C. latiusculus** Esch.—Very robust, obtuse before, acuminate behind, black, opaque, clothed with fusco-cinereous pubescence. Antennæ rather short, serrate, barely equaling the head and thorax in length, joints 3-10 twice as long as wide at tip; in the ♂ the joints are less gradually dilated towards the tip. Head and thorax densely strongly punctulate, with distinct, sparser coarse punctures intermixed; thorax as wide as long, and as wide as the elytra, convex, longitudinally impressed at middle from near the apex, feebly on the disc to base; basal plicæ long, median basal lobe not deeply bisinuate, sides strongly rounded and narrowed in front, obliquely less narrowed behind, hind angles not or scarcely divergent. Elytra subdepressed, sides rounded or subparallel, narrowed from behind the middle to the tip, which is rather acute, striæ scarcely impressed, the seventh and eighth a little more distinctly so, punctures elongate, rather closely placed, sometimes confluent; intervals flat, with coarse and fine punctures, not densely placed. Body beneath finely punctulate, with sparser coarse punctures, intermixed; propleuræ a little more closely punctulate than the prosternum, with the stronger punctures less evident, submarginal lines reaching the middle or beyond, prosternal process somewhat flexed, not margined behind; hind coxal plates not narrowed externally, angles rounded; legs black, the middle and hind trochanters beneath and knees usual rufescent, tarsi piceous, rather thickly spinous beneath, the first joint shorter than the last. Length .3-.4 inch; 7.5-10 mm.

California, Southern California, Oregon, Washington Territory, Vancouver's Island. In various collections.

The large opaque thorax, the flattened intervals and the acuminate tip of the elytra distinguish this species.

22. **C. tenebrosus** Lec.—Form elongate, parallel, black or somewhat bronzed, clothed with fine fuscous or cinereous pubescence and suberect bristles. Antennæ black, rather slender, longer in the ♂, with the joints thicker, sometimes much stouter. Head and thorax moderately to strongly punctulate, with sparser coarse punctures intermixed, thorax moderately convex, disc usually narrowly impressed from before the middle nearly to base, basal plicæ long, lobe feebly tridentate, the median tooth more or less obsolete, sides strongly rounded and narrowed before, less narrowed and usually sinuate behind, the angles slightly or not divergent. Elytra a little wider than the thorax, moderately convex, sides subparallel, rounded and narrowed at apical third to tip, striæ punctate, feebly to well impressed, intervals flat or moderately convex more or less punctulate with coarser punctures more or less evident. Body beneath closely punctulate with scattered coarser punctures, except on the propleuræ, submarginal lines impressed, usually reaching in front of middle, but sometimes shorter or very short, intercoxal lines disappearing behind, sometimes quite obsolete between the coxæ, hind coxal plates variable, usually narrowed externally with the angles strongly rounded, but sometimes transverse behind. Legs varying from entirely black to entirely red, sometimes slender and with the tibiæ moderately spinous, or stouter, with the tibiæ more strongly spinous, tarsi usually with the first joint distinctly shorter than the last, but also sometimes subequal to it. Length .23-.44 inch; 5.7-11 mm.

Nebraska, Colorado, Wyoming, Idaho, Montana, Oregon, Washington Territory, Vancouver's Island, California, Nevada.

A wide spread and variable species, difficult to limit exactly, but while five or six extremes of variation can be pointed out depending somewhat upon locality, they appear to be connected by intermediate forms. *C. fulvipes* is one of these varieties, *C. montonus* Bland another, and has no relation to *tumidicollis*, of which it has been made a synonym. Nearly a hundred specimens from the various localities indicated have been examined showing considerable variation in all characters. The punctuation is variable, but usually moderate, never so strong as in *latusculus*; when it is strong the striæ of the elytra are frequently more impressed. The prosternal process is usually well developed and but slightly elevated behind, but it is, however, sometimes seen to be more strongly elevated, usually in smaller and feeble specimens, and in that event dependence must be placed upon other characters. In one variety or race from California, with more cinereous pubescence, black legs and the thorax

not impressed, the form smaller and more slender, it has been noticed that the lateral pieces of the ♂ genitalia are simple and acute at tip, not barbed as usual.

The type of *fulvipes* Lec. is a ♀, feebly purple bronzed; legs entirely yellow. One specimen in the LeConte collection has the thorax densely punctured and opaque, but otherwise seems to be like the type. Some very robust females from Oregon might be confounded with *latiusculus*, but the thorax is finely punctulate, and the males are of the usual form.

23. **C. convexulus** Lec.—Robust, black, shining, clothed with subcinereous pubescence and very fine suberect bristles, *tarsi rufous*. Antennæ black, serrate, as long as the head and thorax in the ♂, with joints broader at middle, shorter in the ♀. Head and thorax punctulate, with sparser coarser punctures intermixed, thorax very convex, tumid above, sides rounded and narrowed in front, less narrowed and feebly sinuate or oblique behind, feebly impressed at middle in front of the base and as usual on each side of the basal lobe, which is tridentate, the middle tooth a little less prominent, basal plicæ moderate. Elytra a little wider than the thorax, punctate striate, intervals feebly convex and punctulate, sides subparallel, narrowed and rounded at tip. Body beneath punctulate, the larger punctures not very evident on the prosternum or flanks, distinct behind, submarginal lines of prothorax feeble, rarely reaching the middle and also rarely, quite obsolete, hind coxal plates transverse behind, angles rather strongly rounded. Legs black, tarsi rufous, first joint of middle and hind tarsi about equal to the last. Length .30-.40 inch; 7.2-10 mm.

Canada (Horn), White Mountains, N. H., Mass., Me., Ohio.

Known from the previous species by the greater convexity of the thorax, best compared in a lateral view; the coarser punctures are rather less evident above and the bristles, distinct in well preserved specimens of the last, are here very fine or scarcely noticeable. The ♀ is sometimes very stout, with the alternate intervals of the elytra, especially the sixth and eighth, more elevated.

24. **C. crinitus** n. sp.—Slender, feebly bronzed or black, shining, clothed with more or less distinct white and brownish mixed pubescence and brown bristles. Antennæ black, or with the basal two joints rufescent, slender, not very strongly serrate. Head, more strongly, and thorax moderately closely punctulate, the latter moderately convex, not or scarcely longer than wide, with the sides more or less strongly rounded and narrowed in front and sinuate behind, the angles divergent, impressed in front of the basal lobe and transversely each side, lobe feebly tridentate, plicæ short or moderate. Elytra wider than the thorax, subparallel, moderately convex, punctate striate, the striae feebly impressed on the disc, more strongly at base and sides, intervals feebly convex or flat, punctulate. Body beneath distinctly, rather closely punctulate, less closely on the prosternum, on which and on the propleuræ the coarser punctures are not evident, punctuation double behind, submarginal lines of prothorax im-

pressed, usually reaching before the middle, prosternal process strongly ascending, marginal lines distinct between the coxæ, hind coxal plates strongly narrowed externally and broadly rounded from the trochanters outward. Legs piceous, varied with rufous, tarsi with the first joint shorter than the last. Length .25-.28 inch; 5.7-7.1 mm.

California. Four males in Mr. Ulke's collection not greatly differing in size; a much larger and more coarsely hairy ♂, with more slender antennæ, in Mr. Austin's. Some of the specimens have three or four broad, faint impressions along the disc of the elytra. The external rudimentary fissure at base of pronotum is not evident. In one of the smaller specimens the submarginal lines are short, not reaching the middle.

25. **C. pubescens** n. sp.—Elongate, moderately slender in the ♂, robust in the ♀, black or fuscous, clothed with a rather dense cinereous pubescence, bristles very fine and scarcely distinguishable or coarser and more evident, legs partly rufous. Antennæ normally black, longer than the head and thorax in the ♂, with the joints broader, much shorter and more slender in the ♀. Head and thorax rather closely punctulate with scattered, somewhat coarser punctures intermixed, or more finely punctulate with the sparser punctures and bristles more distinct; thorax somewhat variable, convex, more narrowed in front, sides broadly rounded or subparallel at middle, or more or less strongly rounded, scarcely sinuate behind, basal lobe feebly bisinuate, impressed in front of and each side of the lobe, plicæ moderately long. Elytra wider than the thorax, striæ impressed, punctate, intervals slightly convex and punctulate. Beneath finely punctulate and pubescent, coarser punctures evident on the prosternum and behind, submarginal lines of prothorax broad and distinct, but very short, not reaching the middle, prosternal process short, compressed behind and strongly ascending, hind coxal plates a little narrowed externally or nearly transverse behind, the free angle rather strongly rounded, legs black or piceous, the tibiæ varied with rufous, the tarsi rufous, the first joint shorter than the last. Length .25-.33 inch; 6-8 mm.

Wyoming (Ulke), two males; New Mexico, one male; Colorado, one male one female (Horn).

Under the above name I have associated five specimens all having a rather long and dense pale cinereous pubescence, the prosternal process short and strongly flexed and the submarginal sutures very short, but distinct. The Wyoming specimens are black; the three specimens in Dr. Horn's collection with the elytra brown, possibly from immaturity. In the Colorado specimens the prosternal process is not so strongly ascending and the last joint of the palpi is narrower than is usual. In all the specimens the last joint of the maxillary palpi is less distinctly triangular.

26. **C. carbonatus** n. sp.—Elongate, black, very opaque, more slender in the ♂ with inconspicuous fine cinereous pubescence and suberect black bristles. Antennæ black, longer and stouter in the ♂, the last two joints passing the base of the thorax, about equal to the head and thorax in the ♀, joints twice as long as wide. Head and thorax very densely punctate, a few coarser punctures evident on the head, but less marked on the prothorax; the thorax is a little longer than wide in the ♂, not longer than wide in the ♀, widest a little before the middle, especially in the ♂, sides rounded and more narrowed in front, obliquely narrowed from the middle behind and not sinuate, feebly impressed behind the middle, more distinctly each side at base, basal lobe broadly emarginate, plicæ moderate, the outer rudimentary one not evident. Elytra a little wider than the thorax, moderately convex, parallel, gradually narrowed and rounded at tip, broadly and feebly impressed before the middle, and with small, scattered, transverse callosities slightly interrupting the striæ, the latter are fine, feebly impressed and with elongate punctures, intervals flat, closely and strongly punctulate. Body beneath closely and strongly punctulate, with very evident coarser punctures intermixed, prothorax with submarginal lines distinct, reaching the middle, prosternal lobe rather short and broadly rounded, or almost truncate in front, posterior process short, lower surface strongly ascending, marginal lines absent behind; hind coxal plates narrowed externally with the free angles rather strongly rounded. Legs black or piceous, varied with rufous at the joints, tarsi rather slender and a little longer in the ♂, last joint longest. The ♂ genitalia have the middle piece slightly broader near the tip, which is rounded, the lateral pieces are broad, rapidly acuminate at the tips, which are minutely excurved and not barbed. Length, ♂ .27 inch; 6.3 mm.; ♀ .30 inch; 7.6 mm.

One pair, California. Mr. Ulke's collection.

A more elongate species than *obscurus*, more densely punctate and more intensely black, with more slender antennæ.

27. **C. obscurus** Lec.—Rather elongate or stouter in the ♀, black, or lead black, subopaque, clothed with distinct fuscous, brown or purple brown pubescence and suberect bristles. Antennæ black, serrate, stouter in the ♂, the broader joints less than twice as long as wide, longer than the head and thorax, more slender and a little shorter in the ♀. Head and thorax densely finely punctate, with sparser coarser punctures intermixed, the thorax convex, as wide as or wider than long, sides strongly rounded and narrowed in front, obliquely less narrowed behind, sometimes feebly sinuate, impressed behind at middle and on each side of the basal lobe which is broadly emarginate and bisinuate, plicæ distinct and moderately long. Elytra a little wider than the thorax, moderately convex, sides parallel, striæ narrow, very feebly impressed on the disc and apex, more distinctly at base especially and sides, punctures elongate, closely placed, intervals flat, rather closely punctulate. Body beneath distinctly and rather closely punctulate, with intermixed coarser punctures, shining and pubescent; prothorax with the submarginal lines distinct, reaching in front of middle, intercoxal process strongly ascending, hind coxal plates a little narrowed externally, the angles strongly rounded. Legs black or piceous, with bases and tips of joints narrowly or broadly rufous, tarsi with the last joint longest. Length .26-.30 inch; 6.2-8 mm.

California. Henshaw, Horn, Ricksecker, Ulke.

The disc of the elytra is frequently broadly impressed at middle and less distinctly behind. Most nearly allied to *æneus*, but not bronzed, and a little less densely punctate, and the second joint of the antennæ is distinctly more than one-half as long as the third. In one ♂ the joints of the antennæ are almost as gradually narrowed as in the ♀.

28. **C. æneus** Horn.—Form as in *obscurus*, coppery or dull bronzed, clothed with rather dense gray pubescence and suberect bristles. Antennæ black, serrate, second joint one-half as long as the third, longer than the head and thorax in the ♂ and stouter, joints 3-6 broadest and about one-half longer than broad, the outer joints gradually more slender. Head and thorax very densely finely punctate, the usual coarser punctures evident, frontal margin depressed and very fine at middle; the thorax is convex, about equally broad as long in the ♂, wider than long in the ♀, the sides strongly rounded and narrowed in front, obliquely less narrowed behind, sometimes feebly sinuate, impressed at middle behind and at base each side, lobe tridentate the median tooth feeble, plicæ distinct, moderate. Elytra a little wider than the thorax, sides subparallel or feebly rounded, subdepressed, punctate striate, with the striæ occasionally interrupted, intervals but feebly convex, usually densely punctulate. Body beneath more or less bronzed, pale cinereous pubescent, strongly and rather closely punctulate, the coarser punctures not very evident on the flanks of the prothorax, elsewhere distinct, submarginal lines of prothorax well marked, usually broad and strongly impressed and reaching in front of middle, prosternal process, moderately long, more or less strongly ascending beneath, marginal lines absent behind the coxæ, hind coxal plates slightly narrowed externally, the angles rounded. Legs bronzed, black or piceous, with the knees, tips of tibiæ and of the tarsal joints rufous, tarsi with the last joint longest. Length .27-.37 inch; 6.5-9.3 mm.

California. In various collections.

The distinctly bronzed specimens are easily recognized, but some of the darker specimens might be confounded with *obscurus*. The tendency of the frontal margin to be depressed has not been observed in *obscurus*.

29. **C. robustus** Lec.—Elongate, stout, or very stout in the ♀, clothed with cinereous and brownish pubescence and bristles, legs rufous. Antennæ black, second joint short, joints 3-6 broader in the ♂, the outer gradually narrower, two or three joints longer than the head and thorax, more slender and shorter in the ♀. Head and thorax strongly punctulate, the larger punctures rarely evident, thorax convex, sides strongly rounded and narrowed in front obliquely narrowed and sometimes feebly sinuate behind, feebly impressed at middle behind and at base each side, lobe tridentate, median tooth distinct, basal plicæ short, distinct. Elytra a little wider than the thorax, sides subparallel or feebly rounded in the ♀, or gradually narrowed and rounded from in front of the middle and strongly narrowed and rounded at tip in the ♂, striæ well impressed at base, less strongly on the disc, punctate, intervals moderately or feebly convex, punctulate. Body beneath strongly punctulate and pubescent, the coarser punc-

tures absent on the prothorax, not very marked behind, punctuation of the prosternum distinctly finer, submarginal lines of prothorax short and feeble, rarely reaching the middle, prosternal process short, usually moderately flexed, with the marginal lines distinct to apex, but specimens have been observed having the process very much attenuated and the marginal lines quite absent, hind coxal plates moderately to strongly narrowed externally with the angle distinct and rounded, or feeble and strongly rounded. Legs rufous, with the thighs usually darker, tarsi moderate, shorter in the ♀, the first joint about equal to the last. Length .28-.40 inch; 7-10 mm.

Mass., N. J., Pa., I. T., Texas.

Two similar males, one from Indian Territory, the other without locality, have the elytra more deeply striate and the intervals more convex. The union of the lateral and discal pubescence of the elytra frequently forms an oblique line from the humeri to the apex. The females are sometimes exceedingly robust with the thorax very strongly convex.

30. **C. seniculus** n. sp.—Very small, slender and subdepressed, black, clothed with coarse, depressed, yellow and white pubescence. Antennæ black, second joint small. Head and thorax rather strongly and closely punctulate, thorax not very convex, more narrowed in front, sides rounded and feebly sinuate behind, hind angles not evidently carinate, basal lobe broadly emarginate, feebly bisinuate, basal fissures very short, strictly marginal, the outer rudimentary ones not evident, base very deeply impressed each side of the lobe, not impressed at middle; elytra depressed, sides parallel, striæ feebly impressed, intervals flat, punctulate. Body beneath punctulate, pubescent, submarginal lines of prothorax reaching the middle, prosternal lobe short, broadly rounded, posterior process short, strongly flexed, marginal lines not reaching behind the coxæ, the hind coxal plates appear to be narrowed externally with the angles rounded. Legs with the thighs piceous, rufous at base and tip, tibiæ rufopiceous, tarsi paler, first joint shorter than the last. Maxillary palpi dark piceous, the last joint elongate, gradually and moderately dilated to tip, which is subtruncate. Length .20 inch; 5 mm.

California. One male, Dr. Horn.

The single specimen is not in very good condition. The basal two joints of the antennæ alone are present. Seems quite unlike anything else by the characters above. The male appendages are exerted, the central piece is longer, slender and blunt at tip, the lateral pieces broad, gradually narrowed to near the tip and then suddenly narrowed and finely barbed at tip.

31. **C. dispar** n. sp.—Rather slender in the ♂, ♀ robust, black, with fusco-cinereous pubescence and conspicuous erect bristles. Antennæ black, slender and one half as long as the body in the ♂, in the ♀ very short, one-half as long as the head and thorax, finely serrate, with the joints, except first, third and last, not longer than broad; palpi black, last joint narrow, oval, pointed at tip. Head

rather densely punctate, impressed behind the frontal margin, which is somewhat depressed at middle; thorax more finely and less densely punctulate, convex, feebly longitudinally impressed from before the middle nearly to base, sides strongly rounded, more narrowed in front, as long as wide and sinuate behind in the ♂, wider than long, and less sinuate in the ♀, somewhat transversely impressed each side at base, lobe broadly emarginate, fissures moderate, the outer not evident, hind angles carinate. Elytra a little wider, subdepressed in the ♂, very convex in the ♀, a little wider behind the humeri, which are distinct, then parallel to near the apex, whence they are strongly rounded, striæ narrowly impressed, punctures fine, rather distant, intervals moderately convex and punctulate. Body beneath finely not densely punctulate, with apparent coarser punctures intermixed on the sides of the prothorax as well as elsewhere, submarginal lines of prothorax quite absent, intercoxal process very short and strongly attenuated and ascending behind, anterior lobe short and broadly rounded, hind coxal plates prominent and produced between the legs, but not at all dilated externally nor transverse, the outer margin obliquely sinuate from the inner posterior angle outward. Legs black or piceous, stouter in the ♀, the tibial spurs short, stouter than usual, tarsi much longer in the ♂, the last joint very long, in the ♀ the tarsi are very short, scarcely exceeding one-half the length of the tibiæ, the last joint relatively long, about equal to joints 1 and 2, claws simple. Length, ♂ .25 inch; 6 mm.; ♀ .33 inch; 8 mm.

California. One pair, Dr. Horn.

A very peculiar species, easily known by the characters detailed. The ♂ genitalia have the lateral pieces distinctly barbed externally at tip, the middle one slender and a little longer, as usual. The hind coxæ are of the same form essentially as seen in *Eniconyx*, which tends to confirm Dr. Horn's suggestion as to the relationship between the *Cardiophori* and the *Aphrici*. The species should probably be placed in a new genus.

Elatér filius Randall has been supposed to possibly belong to the present genus, but the description does not apply to any species known to me.

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II.

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30. *C. seniculus* n. sp.
31. *C. dispar* n. sp.